17. Summarize the importance of composting in urban organic gardens. What are the different types of composting systems suitable for small spaces?

18. Explain the role of Rhizobium in agriculture, including its structure and the process of nitrogen fixation that helps legumes enhance soil fertility.

19. Demonstrate Anabaena's structure, characteristics, and functions as a biofertilizer in agricultural systems.

20. Outline the production process and quality control measures necessary to ensure the effectiveness of Azotobacter biofertilizer.

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NOVEMBER/DECEMBER 2024

23USMB33 — ORGANIC FARMING AND BIOFERTILIZER TECHNOLOGY (SEC IV)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. How does crop rotation benefit biodiversity in organic farming?

2. Name two advantages of using biofertilizers compared to chemical fertilizers.

3. Name two benefits of small-space gardening in an urban environment.

4. Define Vermicomposting.

5. What is the role of Azotobacter in soil Fertility?

6. Name two key characteristics of Pseudomonas as a biofertilizer.

7. What type of symbiotic relationship does AM mycorrhiza have with plants?

8. What type of habitat is ideal for Nostoc growth?

9. How does moisture content affect the shelf life of solid biofertilizers like Rhizobium?

10. Why is it important to check for contaminants in Anabaena biofertilizer?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss the principle of ecological balance in organic farming.

Or

(b) Explain intercropping in organic farming and its benefits for biodiversity.

12. (a) Analyze the role of vertical gardening techniques in enhancing small-space gardening in urban areas.

Or

(b) Compare and contrast square-foot gardening with traditional gardening methods in terms of space efficiency and resource management.

13. (a) Demonstrate the structure and characteristic features of Azospirillum.

Or

(b) Summarize the role of Erankia in promoting plant growth in nutrient-poor soils.

14. (a) Elaborate note on the structure and functions of AM mycorrhiza as a fungal biofertilizer.

Or

(b) Outline the structural features of Nostoc and its role as a cyanobacterial biofertilizer.

15. (a) List out the steps involved in the mass production of Rhizobium as a biofertilizer.

Or

(b) Explain the common methods used to extend the shelf life of biofertilizers like Anabaena.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss how the principle of health is practiced in organic farming. Explain its effects on soil health, crop quality and human health.